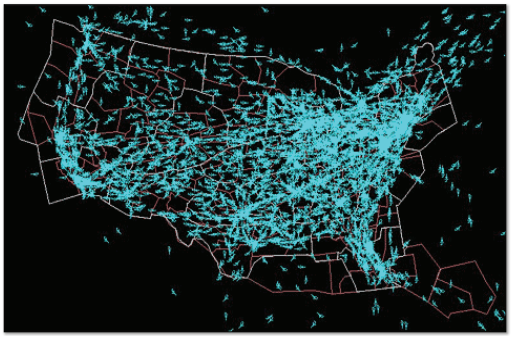
Earth System Research Laboratory
Global Systems Division
Putting tools in the hands of users
Support for NextGen



- NextGen puts tools in the hands of those managing U.S. airspace.
- NextGen shares information in real time to improve efficiency, safety, and absorb the predicted increase in air traffic.

GSD and NextGen

The Global Systems Division (GSD) is developing state-of-the-art weather forecasts, verification tools, and information technology services for the Next Generation Air Transportation System (NextGen). This Congressionally-mandated, multi-agency, and private sector partnership aims to increase the efficiency of the nation's airspace while maintaining high levels of safety.

What is NextGen?

- NextGen is the solution to the predicted U.S. air traffic increase of two to three times by 2025.
- NextGen is active networking technology that updates itself with real-time shared information and tailors itself to the individual needs of all U.S. aviation operations.
- NextGen's computerized air transportation network stresses adaptability by enabling aircraft to immediately adjust to ever-changing factors such as: weather, traffic congestion, aircraft position via GPS, flight trajectory patterns, and security issues.

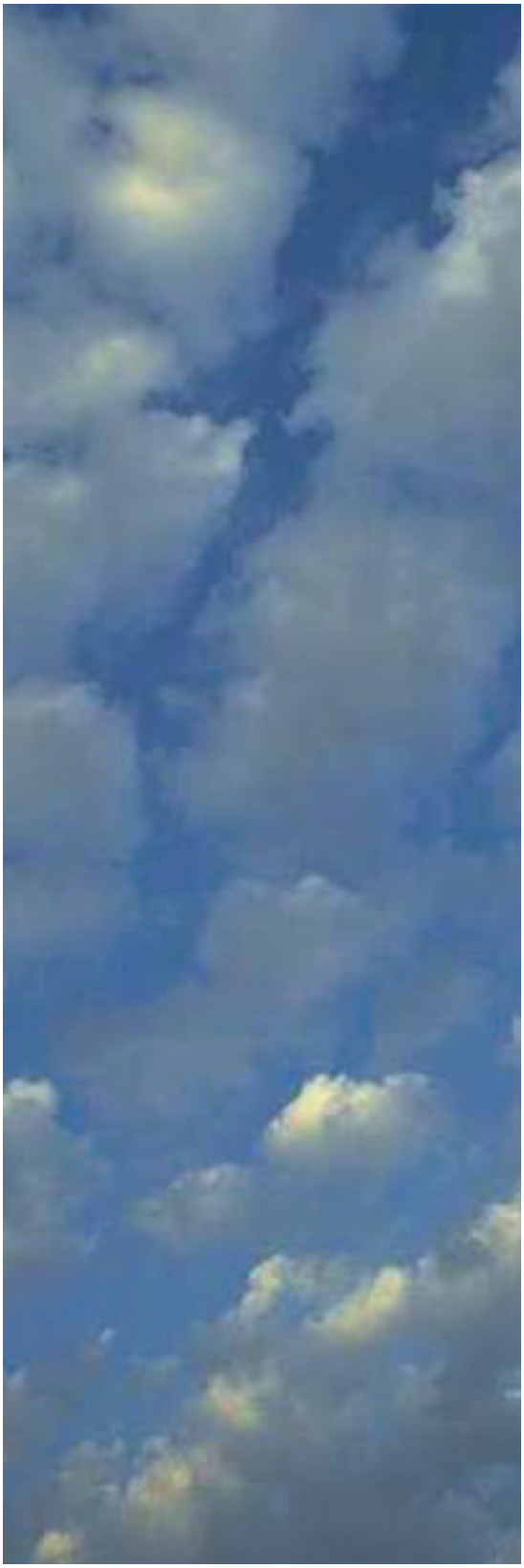
By 2025, all aircraft and airports in U.S. airspace will be connected to the NextGen network and will continually share information in real time to improve efficiency, safety, and absorb the predicted increase in air traffic.

GSD Primary Goal for NextGen

Develop and test concepts for delivering helpful, accurate, and timely weather information, where- and whenever needed, to those managing the U. S. airspace.

At GSD We:

- Develop concepts and tools that consolidate forecasts and ensure that forecasts are meteorologically-consistent spatially, temporally, and across variables. Explore capabilities that will enable forecasters to add value to model-generated forecasts.



- Develop a post-processing method that includes observation-based statistical bias correction, blended nowcasts and forecasts, and optimal weighting for ensemble-based probabilistic forecasts.
- Conduct R&D for verifying forecasts and ensure that those forecasts are optimized to support specific Air Traffic Management (ATM) operations. Enhance capabilities of GSD's Network-enabled Verification Service (NEVS) to verify forecasts.
- Develop concepts and build initial "path-finder" capability that will facilitate developing the Single Authoritative Source (SAS) as requirements are defined.
- Develop an initial network-enabled 4-D weather data cube that will synthesize important NWS data repositories into a seamless virtual weather database that will support a consistent weather picture. The 4-D weather cube will be based on standard network-enabled data services and standard formats that will enable effective and efficient populating of the weather cube, exposure of information, and access to users.
- Develop capability for NWS IT infrastructure to effectively and efficiently interface with FAA IT infrastructure.

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